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Original Article

Twitter[®] Use and Its Implications in Spanish Association of Surgeons Meetings and Congresses[☆]



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Introduction: The use of web 2.0 tools and especially Twitter is in full expansion. Twitter has jumped from the personal field to the professional with great success, joining as a means of regular dissemination in scientific congresses.

Material and methods: The use of Twitter from 2013 to 2016 was monitored at the congresses of the Spanish Association of Surgeons (AEC). To do this, the hashtags (# rnc13, # cnc14, # rnc15, # cncirugia16) were analyzed through various websites for analysis of hashtags.

Results: The use of Twitter among the members of the Spanish Association of Surgeons has increased clearly, surpassing other American societies. It has increased in number of tweets, in number of tweeters and in the ratio of the same with respect to those attending congresses. While at the beginning the majority of tweets (65%) were the responsibility of a group of influencers, in recent years, due to the increase in tweets, the maximum influencers are only responsible for 35% of tweets. The number of institutional accounts in the top 10 has also been reduced.

Conclusion: In the AEC the use of twitter has grown clearly and almost exponentially in recent years. Although initially the tweeted community was small and a few were

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responsible for a majority of tweets, the progressive growth and penetration of twitter has made that in recent congresses, these influencers and institutional accounts are no longer the main driver of the use of twitter in the congresses.

Given the global trend and the Spanish Association of Surgeons, it is expected that tools such as Twitter play an increasingly important role in the management and transmission of knowledge, as well as in the creation of collaborative networks between professionals.

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Uso de Twitter® y sus implicaciones en las reuniones y congresos de la Asociación Española de Cirujanos

R E S U M E N

Palabras clave:

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Web 2.0

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Introducción: El uso de herramientas de la web 2.0. y en especial de Twitter está en plena expansión. Twitter ha saltado del ámbito personal al profesional con gran éxito, incorporándose como medio de difusión habitual en congresos científicos.

Material y métodos: Se realizó un seguimiento del uso Twitter de 2013 a 2016 en los congresos de la Asociación Española de Cirujanos (AEC). Para ello se analizaron los hashtags (#rnc13, #cnc14, #rnc15, #cncirugia16) mediante diversas webs de análisis de hashtags.

Resultados: La utilización de Twitter entre los miembros de la Asociación Española de Cirujanos ha aumentado de forma clara, superando a otras sociedades americanas. Ha aumentado en número de tuits, en número de tuiteros y en el ratio de los mismos respecto a los asistentes a congresos. Mientras que al inicio la mayoría de tuits (65%) eran responsabilidad de un grupo de influencers, en los últimos años y pese al aumento de tuits, los máximos influencers sólo se responsabilizan del 35% de tuits. El número de cuentas institucionales en el top 10 también se ha reducido.

Conclusión: En la AEC el uso de twitter ha crecido de forma clara y casi exponencial en los últimos años. Aunque en un inicio la comunidad tuitera era reducida y unos pocos eran responsable de una mayoría de tuits, el crecimiento progresivo y la penetración de twitter ha hecho que en los últimos congresos, estos influencers y cuentas institucionales ya no sean el principal motor del uso de twitter en los congresos.

Dada la tendencia mundial y de la Asociación Española de Cirujanos, es de esperar que herramientas como Twitter jueguen un papel cada vez más importante en la gestión y la transmisión del conocimiento, así como en la creación de redes de colaboración entre profesionales.

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Introduction

The World Wide Web (WWW) is a network of connected computers worldwide that is changing the way we communicate and consume information. The progress of these technologies has increased both the speed at which we share information and the capability for its diffusion. In fact, in recent years researchers and clinicians have started to depend on less formal means to share ideas and explore new alternatives for distributing opinions and research, doing so in real time.¹

All of this has been the result of the development of Web 2.0 in general, and Twitter® in particular, which has become the most popular form of informal communication among different surgical societies and even the journals that are their official means of communication (for example, @annalsurgery, @JAMASurgery, @cirugiaespanola). Moreover, the use of this digital social network has leaped from the private to the professional setting for many surgeons.²

Twitter® is a microblogging platform in which users (accounts identified with the @ symbol) publish texts of a maximum of 140 characters, called "tweets", that can also include images, videos or links to other sites or contents. Twitter® provides for synchronous communication between different users on a specific topic,³ which is very convenient for the diffusion of content from scientific meetings. In fact, the growing interest in its use has generated some debate at meetings of medical professionals in recent years. The use of a "hashtag" (metadata tag that is generated by placing the # symbol in front of a string of characters that you want to identify) allows for all the tweets about a specific topic to be grouped, providing access to a historical file of content about a particular topic and making it possible to analyze the activity within the social network.

The objective of this study is to analyze the implantation, evolution of use and impact of Twitter® in the scientific meetings of the Spanish Association of Surgeons (Asociación Española de Cirugía, AEC).

Material and Methods

We chose to study national meetings and congresses of the AEC held between 2013 and 2016 because these events have an official hashtag provided by the official AEC account (@aecirujanos), which functioned as a label for tweet analysis.

The data sources used were the data websites symplur.com, followthehashtag.com and tweetbinder.com, which enabled all issued tweets containing the hashtags #rnc13, #cnc14, #rnc15 and #cncirugia16 to be monitored.

These websites provide detailed information about Twitter[®] activity for specific hashtags. The variables analyzed were: number of tweets, number of attendees to the conference, number of users, tweet type, percentage of participation, account type, tweet speed, number of impressions (number of times a tweet was seen) and hourly activity.

Likewise, the users with the highest tweet load in the congress (top 10) were compiled and related to the total results.

Results

When tweets were analyzed with hashtags from conferences and meetings of the AEC in the last 4 years, we observed that the average number of tweets sent was 1121 (119–3049), while the average number of accounts that sent tweets with any one of the 4 hashtags was 166 (18–398). As for the tweets per user, the mean was 6.19 (4.42–8).

The average number of attendees at the scientific meetings was 1261.5 (1093–1417), and the average attendee/user ratio was 21.27 (3.56–60.72) attendees for each Twitter user. Although the number of impressions for the first meeting is not available, the average number of impressions was 2 530 352 (838 255–5 849 303).

The number of tweets has increased exponentially throughout the 4 years of the study, highlighting a greater number of tweets in the congresses compared to the meetings (Table 1). The number of Twitter users has followed a similar distribution (Fig. 1).

Upon analyzing the “influencers” of each conference, it is interesting to highlight that both in 2014 and in 2015 65% of the weight of the activity fell on this group; meanwhile, in the last congress of 2016, the 10 most active users alone were responsible for 38% of the activity. This suggests that the tweeting activity has spread among the surgical community.

Similarly, the number of institutional accounts in the top 10 has decreased over the years (Table 2).

By analyzing the evolution, we observed how the difference regarding mentions and tweets between 2014 and 2015 was scarce, while between 2015 and 2016 there was an increase that reached marginally significant results (Table 3).

Discussion

Unlike the National Meeting of 2013, in which the hashtag #rnc13 was not official beyond the association’s account and was not present on the conference posters or other communications, since the National Congress of 2014 there has been active promotion of the hashtag on posters and in communications. This has clearly made an impact on the number of tweets, with 730.25% more in 2014 than in 2013. This situation was reinforced by the growing community of surgeons who use Twitter[®],^{1,2} reaching the figure of 3049 tweets in the 2016 congress.

The use of this tool by Spanish surgeons is not inferior to previously published reports for American surgery conferences. Despite designating a “Twitter[®] team” for the 2013 Academic Surgical Congress,³ the American association only obtained 434 tweets with the congress hashtag, generated by only 37 independent users, a much lower use than during the 2014 Spanish National Congress of Surgery (Table 1).

The use of Twitter[®] at medical events has experienced rapid expansion in recent years. The reported experiences for different scientific meetings around the world⁴ have concluded that the active management of web 2.0 media, especially Twitter[®], promotes conferences and greater diffusion of information. This provides for local communication within the congress, real-time discussion about the conference and the transversal exchange of opinions.^{5,6}

Recently, international colorectal surgeons launched a campaign using the hashtag #colorectalsurgery. In 24 weeks, this campaign accumulated more than 1600 Twitter[®] users and more than 12 000 tweets around the world, which have been viewed more than 35 million times.⁷

The main recommendations are aimed at establishing working groups focused on the Web 2.0^{1,8} and its use for different scientific meetings, a strategy identified with the slogan “Tweeting the Meeting”.⁹ The accounts of the scientific societies, together with actions such as publicity with the hashtag or the inclusion of the user name in different communications, encourage the exchange of ideas and

Table 1 – Percentage of Original Tweets, Responses, Retweets and Those With Images or Links.

Variable	#cncirugia16	#rnc15	#cnc14	#rnc13
Number of tweets ^a	3049	483	831	119
Number of Twitter users ^a	398	102	147	18
Assistants/user ratio	3.56	11.59	9.22	60.72
Tweets/user ^b	8	4.42	5.95	6.6
Impressions ^a	5 849 303	838 255	903 500	–

^a Data obtained from symplur.com.

^b Data obtained from followthehashtag.com.

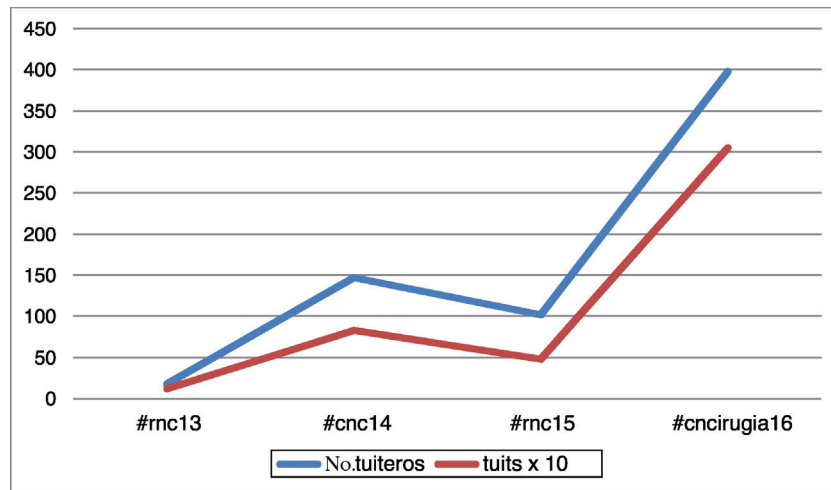


Fig. 1 – Comparison of the number of Twitterers and tweets among congresses.

Table 2 – Relationship Between Top Users and Total Data.

Variable	#cncirugia16	#rnc15	#cnc14
Number of tweets ^a	1169	307	532
Percentage of tweets out of the total ^a	38.3	63.6	64
Number of institutional accounts	3/10	4/10	5/10

^a Data from symplur.com.

Table 3 – Mann-Whitney U Between 2014 and 2015, and Between 2015 and 2016.

Mann-Whitney U between 2014 and 2015			
Variable	#rnc15	#cnc14	P
Number of mentions ^a	48.8±65.7	53.9±61.4	.8597
Number of tweets ^a	32.3±49.6	32.3±49.6	.3878
Mann-Whitney U between 2015 and 2016			
Variable	#cncirugia16	#rnc15	P
Number of mentions ^a	167±169.9	48.8±65.7	.055
Number of tweets ^a	116.9±135.3	32.3±49.6	.0798

^a Data obtained from symplur.com.

knowledge between the speaker and attendees through this microblogging network.^{2,5}

Once high diffusion of these new technologies has been achieved among the members of these societies, it will be possible to propose special sessions during the conferences, collect questions in an annex during the presentations, or consider the general opinion of the participants to questions asked.

Leading scientific and editorial journals now have their own Twitter[®] accounts, where updates and the latest evidence-based articles are provided. The accounts of scientific societies, in addition to citing new articles and collaborating in their diffusion, are not only able to attract

young surgeons and students, but they also bring them together around topics of mutual interest and facilitate the exchange and discussion of knowledge. Likewise, they improve the communication of courses, congresses, campaigns and clinical trials.² Twitter[®], therefore, provides a valid medium for the exchange of information during medical conferences, extending its reach nationally and internationally. It is already considered a valid and reliable source of news and, in the same way, it is also acquiring these attributes in terms of scientific information.¹⁰

Conflict of Interests

The authors have no conflict of interests to declare.

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